

METHOD AND APPARATUS SUPPORTING A SLIDER HAVING  
MULTIPLE DEFLECTION RAILS IN A NEGATIVE PRESSURE  
POCKET FOR A HARD DISK DRIVE

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ABSTRACT

An air bearing surface, with multiple deflection rails in a negative pressure pocket, between a leading air bearing surface and a central island for the read-write head. A gap separates left and right deflection rails. During the slider's normal operation, incoming particles may collide with at least one of the deflection rails and deflect away from the central island and the  
10 read-write head. The gap supports diminishing additional negative pressure in the negative air pressure pocket. The gap may minimize the accumulation of debris behind the rejection rails. The invention includes head gimbal assemblies containing these sliders, actuator arms coupled to the head gimbal assemblies, actuator assemblies including at least one of the actuator arms, and hard disk drives which include the actuator assemblies. The invention also includes methods for  
15 making sliders, actuator arms, actuator assemblies, and hard disk drives, as well as the products of these manufacturing methods.